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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,130	02/22/2002	David Ernest Johnston	01-002	8493

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FREUDENBERG-NOK GENDERAL PARTNERSHIP
47690 E, ANCHOR COURT
PLYMOUTH, MI 48170

EXAMINER

PATEL, VISHAL A

ART UNIT	PAPER NUMBER
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3676

DATE MAILED: 03/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/081,130

Applicant(s)

JOHNSTON, DAVID ERNEST

Examiner

Vishal Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspond nc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 4 is objected to because of the following informalities: Claim 4, line 1, "line" should be replaced by --lines--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 6-7, 11-13 and 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Victor (US. 2,172,325).

Victor (figure 3) discloses a shaft seal assembly comprising:

a case (42) having axial and radial portions;

an elastomeric seal body (40) molded to the case;

a lip portion (lip 36) extending from the seal body, originating in a hinge portion (portion between the lip portion and the body 40); and

a liner (38) attached to the lip portion (38).

The radial portion having a length. The seal body includes a radial portion having a length less than the length of the radial portion of the case (the seal body 40 fits within the case).

The lip portion (36) extends over at least a portion of the length of the radial portion of the case (the lip 36 extends over at least a portion of the length of the radial portion near 42) and is integrally formed with the seal body and extends over the length of the radial portion of the

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case of which the radial portion of the seal body does not extend (figure 3). The liner (38) is bonded to the lip portion (see page 2, column 1, lines 54-56).

As to claims 6 and 7, a seal assembly including:

- a case (42) having a radial portion;

- a seal body (40) molded to case and not covering the entire radial portion of the case (figure 3, lip stops short of outer face 44);

- a lip portion (36) extending from the seal body and covering the radial portion of the case not covered by the seal body;

- a liner (38) attached to the lip portion;

The material of the lip portion adjacent the seal body and the radial portion of the case form a flexible hinge (member between 36 and 40 acts as a flexible hinge, see figures 2-3), since it is made of rubber and thinner cross-sectionally than the seal body.

As to claims 11-13, a seal assembly for use with a rotating element (50), comprising:

- a case (42) having an axial portion and a radial portion;

- a seal body (40) bonded to at least the radial portion of the case;

- a hinge bonded (portion between 40 and lip 36) to the seal body adjacent to a terminating section of the radial portion of the case (hinge portion that is in contact with radial portion 42);

- a lip (36) bonded to the hinge (the lip 36 connected to the hinge); and a liner attached to the lip (the lines 38 attached to the lip);

- the seal body, the hinge, and the lip are integrally bonded together (the seal body, hinge and the lip are a single unit);

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the seal body, the hinge, and the lip are formed from an elastomeric material (this is the case since the seal body, the hinge and the lip are formed of rubber);

the radial portion of the case has a length that is greater than a radial length of the seal body (the hinge portion does not contact the radial portion);

the hinge extends over the radial portion of the case that is not covered by the seal body;

the liner is bonded to the lip;

the hinge receives more bending stresses than the liner (inherent since the hinge is the one that gets bent);

the lip receives more bending stresses than the liner (this is the function of the lip and the liner, since the liner hits the shaft and not the lip).

4. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Riesing (US. 2,804,325).

Riesing (figure 2) discloses a shaft seal assembly comprising:

a case (42) having axial and radial portions;

an elastomeric seal body (21) molded to the case;

a lip portion (34) extending from the seal body, originating in a hinge portion (hinge portion between the lip portion and the body 21, which flexes as a hinge see figures 2-3, where figure 3 shows a flex in the hinge portion); and

a liner (48) attached to the lip portion;

The radial portion having a length. The seal body includes a radial portion having a length less than the length of the radial portion of the case (the seal body 21 does not extend to the end of the case but stops short of the outer surface of the flange 44). The lip portion extends

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over at least a portion of the length of the radial portion of the case (the lip 34 extends over at least a portion of the length of the radial portion near 40).

The lip portion is integrally formed with the seal body and extends over the length of the radial portion of the case of which the radial portion of the seal body does not extend (figure 2). The lip portion includes hydrodynamic grooves (grooves 54, column 2, lines 44-53). The lip portion extends from the seal body and covers the radial portion of the case not covered by the seal body (figure 2). The liner (48) is formed from polytetrafluoroethylene. The liner includes a contact surface. The contact surface includes at least one hydrodynamic groove (54).

The hinge portion bonded to the seal body adjacent to a terminating section of the radial portion of the case (the hinge portion is connected to seal body 21 by 32). The lip bonded to the hinge (lip 34 is connected to the hinge portion at 30). The lip and hinge are integrally bonded together (figure 2). The liner is formed from polytetrafluoroethylene. The liner includes at least one groove (groove 54). The radial portion of the case has a length that is greater than a radial length of the seal body (the radial portion has a length that the length of the seal body 21). The hinge extends over the radial portion of the case that is not covered by the seal body. The liner is bonded to the lip (lines 48 is connected to 34). The hinge receives more bending stresses than the liner (inherent since the hinge is the one that gets bent). The lip receives more bending stresses than the liner (this is the case since the liner hit the shaft and not the lip).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Andersen, Jackowski, Cather, Jr, Bainard et al, Stallings disclose a lip having a liner made of PTFE or a liner made of PTFE having grooves and Johnston.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vishal Patel whose telephone number is (703) 308-8495. The examiner can normally be reached on Monday through Friday from 7:30 PM to 4:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight, can be reached on (703) 309-3179.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2168. Technology Center 3600 Customer Service is available at 703-308-1113. General Customer Service numbers are at 800-786-9199 or 703-308-9000. Fax Customer Service is available at 703-872-9325.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

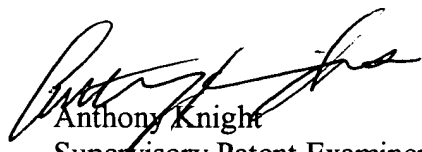
or faxed to: 703-872-9326, for formal communications for entry before Final action: or,
703-872-9327, for formal communications for entry after Final action.

For informal or draft communications, please label **“PROPOSED”** or **“DRAFT”** and fax to: 703-746-3814.

Hand-delivered responses should be brought to Crystal Park Five, 2451 Crystal Drive, Arlington, Virginia, Seventh Floor (Receptionist suite adjacent to the elevator lobby).

VP

March 17, 2003


Anthony Knight
Supervisory Patent Examiner
Tech. Center 3600